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25776	7590	01/30/2004	EXAMINER	
ERNEST A. BEUTLER, ATTORNEY AT LAW 10 RUE MARSEILLE NEWPORT BEACH, CA 92660			LE, DANG D	
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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 0104

Application Number: 09/683,997
Filing Date: March 11, 2002
Appellant(s): ANMA ET AL.

Kabushiki Kaisha Morie
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed November 12, 2003.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

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(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 1-9 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

JP2001-197696	Naoki et al.	7-2001
5,006,745	Nishio et al.	4-1991
2,575,716	Kilgore	11-1951

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naoki (JP 2001197696) in view of Nishio et al. (5,006,745).

Regarding claim 1, Naoki shows a permanent magnet type three-phase AC rotary electric machine including a permanent magnet element (7) having a number of permanent magnet poles (6) and a coil winding element (1) having a number of slots, each of said three phases being connected in a line current circuit and being comprised of a parallel circuit (Figure 6) formed by connecting a plurality of series circuits in

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parallel (4a, 4b, 4g and 4h), said coil winding element comprising cores (3) of each of said series circuits combined such that electromotive voltages or counter electromotive voltages generated across opposite ends of said plurality of series circuits forming each phase are substantially the same (due to the balance of impedances of circuits) based on symmetry of arrangement of said permanent magnets (6) and said coils (4a, 4b, 4g and 4h), thereby preventing generation of a circulating current in said parallel circuit.

Naoki does not show the cores (3) of each of said series circuits being encircled by alternately wound coils.

Nishio et al. show the cores (C1-C18) of each of said series circuits being encircled by alternately wound coils (Figure 7 and 10A-10C) for the purpose of reducing cogging torque.

Since Naoki and Nishio et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to encircle the cores of each of the series circuit with alternately wound coils as taught by Nishio et al. for the purpose discussed above.

Regarding claims 2 and 4, it is noted that Naoki also shows the permanent magnet element having n-number of permanent magnet poles (14 in Figure 1) and the coil winding element having m-number slots (12 in Figure 1) and the value of m is at least 6.

Regarding claim 3, it is noted that Naoki also shows the phases being connected in a Y configuration (Figure 6).

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Regarding claim 7, it is noted that Naoki also shows the number n of poles and said number m of slots having a common divisor (which is 2 for 14 and 12).

Regarding claim 8, it is noted that Naoki also shows the number m of slots being a multiple of 3 represented as $3M$ ($12 = 3 \times 4$), M is at least 4, M coils (4 coils) corresponding to one phase are divided into L sets (2 sets) each comprising M/L coils connected in series (2 coils in series, Figure 7).

Regarding claim 9, it is noted that Naoki also shows the number n of poles and the number m of slots satisfying the following relations, respectively; $n = 2N$ ($14 = 2 \times 7$, $N=7$), $m = 3M$ ($12 = 3 \times 4$, $M=4$) wherein N and M (7, 4) are integers, and also satisfy the following equation; $2m/3 < n < 4m/3$ ($8 < n=14 < 16$).

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naoki in view of Nishio et al. as applied to claim 1 above, and further in view of Kilgore (2,575,716).

Regarding claim 5, the motor of Naoki modified by Nishio et al. includes all of the limitations of the claimed invention except for the phases being connected in a delta configuration.

Kilgore shows the phases being connected in a delta configuration for the purpose of balancing the voltages.

Since Naoki, Nishio et al., and Kilgore are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

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It would have been obvious at the time the invention was made to a person having ordinary skill in the art to connect the phases in a delta configuration as taught by Kilgore for the purpose discussed above.

Regarding claim 6, it is note that Naoki also shows the permanent magnet element having n-number of permanent magnet poles (14) and the coil winding element having m-number slots (12) and the value of m is at least 6.

(11) *Response to Argument*

Before answering every arguments made by the applicants, the examiner would like to note that in the art of motor and generator the windings could only be wound either clockwise or counterclockwise around the stator poles. As the examiner indicated in the Advisory Action, dated September 4, 2003, it is well known to wind the windings alternately around the stator poles in order to create either a north pole or a south pole for magnetic interaction with the rotor poles. See Figure 7 of Nishio et al. and follow the direction of the arrow for U phase through poles C1-C3 and C10-C12. The windings can also be wound around the stator poles in the same direction. See Figure 16 of Nishio et al. and follow the direction of the arrow for U phase through poles C1, C4, C7, and C10.

In fact, Nishio et al. teach in column 3, lines 15-20 that the conventional motor with windings wound around the stator poles in the same direction as shown in Figure 16 produces large cogging torque. Nishio et al. provide different ways to solve the cogging problem by winding the windings around the stator poles alternately in Figures 1, 2, 5-8 and 11-13. Also see column 7, lines 5-14.

As the applicant admitted, Naoki et al. purpose is to reduce the circulating current in a parallel circuit. Although Naoki et al. do not use the alternately wound coils to further decrease the circulating current, Nishio et al. teach to wind the winding alternately in order to reduce the cogging torque, which is a well known problem in the art of motor and generator. In addition, Nishio et al. even disclose the problem of cogging torque with windings wound around the stator poles in the same direction in Figures 15-17 and columns 1-3. As a result, one having ordinary skill in the art would recognize that there is a problem with cogging torque in the machine of Naoki et al.

Therefore, using the alternate winding of Nishio would not destroy the purpose of the basic Naoki reference. Instead, it can improve the performance of the motor by reducing cogging torque as disclosed in column 3 of Nishio reference while maintaining low circulating current as shown in paragraph 0017 of Naoki et al.

In addition, the examiner would like to point out that the motivation in the prior art to combine references needed not be identical to that of the applicant to establish obviousness. In re Kemps, 40 USPQ2d 1309, (Fed. Cir. 1996). Moreover, references may be combined although none of them explicitly suggests combining one with the other. In re Nilssen, 7 USPQ2d 1500 (Fed. Cir. 1989).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does

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not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Regarding the applicant's arguments on the delta configuration, the three-phase windings can be connected with delta or star (also known as Y) configuration. In fact, Kilgore clearly shows the two configurations with parallel windings in Figures 2-4.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

January 15, 2004

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